

REMARKS

Claims 1, 3, 5, 6, 8 – 10 and 12 – 16 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 3, 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tamai et al. (U.S. Pat. No. 6,307,277) in view of Bhavsar (U.S. Pat. No. 6,691,807). This rejection is respectfully traversed.

A. As discussed in detail in the response filed on August 11, 2006, Tamai discloses a fuel management control system for a traditional hybrid vehicle, wherein the system regulates fuel on/off transitions of the engine upon deceleration of the vehicle (Col. 2, Lines 38 – 40). Once fuel and spark are cut to all of the cylinders, the engine is kept spinning and transmission downshifts are performed with the aid of an electric machine, until the transmission is dropped to neutral (Col. 2, Lines 39 – 49). Accordingly, Tamai fails to teach or suggest maintaining at least another of the cylinders active in response to the braking condition.

Applicant further notes that Tamai requires all of the cylinders to remain deactivated (i.e., without fuel and spark) during deceleration. More specifically, it is the object of Tamai to make the engine on/off transients and deceleration as smooth as possible (see Col. 2, Lines 34 – 36) and to provide improved regeneration with the electric motor (see Col. 4, Line 65 – Col. 5, Line 9). For example, fuel and spark are cut to all of the cylinders one by one in order to provide the smooth deceleration (see Col.

12, Lines 56 – 58). Furthermore, by deactivating all of the cylinders, the regeneration energy is maximized because there is no engine braking. Therefore, Tamai requires that all of the cylinders be deactivated in order to achieve its stated objects.

In view of this fact, any combination of Tamai with a reference that discloses less than all of the cylinders being deactivated is improper, because such a combination would render Tamai improper for its intended purpose. More specifically, “[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” (see MPEP §2143.01 citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

Bhavsar not only fails to cure the deficient teachings of Tamai, but a combination of Bhavsar, as interpreted by the Examiner (see discussion below), with Tamai would render Tamai unsatisfactory for its intended purpose.

As discussed in detail in the response filed on August 11, 2006, Bhavsar discloses a hybrid vehicle system that is powered by an electric motor 14 and an engine 16, which provide a total torque output to propel the vehicle. A propulsion control 24 calculates the overall drive torque (i.e., the opposite of braking) demand partially based on the vehicle speed and determines the percentage of the overall drive torque (i.e., the opposite of braking) demand that is to be provided by the electric motor 14 and the percentage that is to be provided by the engine 16 (Col. 5, Lines 35 – 47).

The Examiner has clarified the statement that “at least another of the cylinders would be maintained active in response to the braking condition in accordance with the teachings of Bhavsar et al.” (emphasis added, see Page 4, Lines 4 – 6 of the previous

Office Action), by noting that “at least another of the cylinders would be maintained active in accordance with the teachings of Bhavsar, in response to the braking conditions of Tamai (see Page 6, Last Line – Page 7, Second Line). Accordingly, the Examiner is stating that at least another cylinder is maintained active during braking.

As discussed in detail above, Tamai requires that all of the cylinders be deactivated in order to achieve the objects stated in Tamai. Therefore, combining Tamai with Bhavsar, which, according to the Examiner, teaches that at least another of the cylinders is maintained, is improper because such a combination renders Tamai unsatisfactory for its intended purpose.

B. Applicant further notes that “[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so.” (see *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (emphasis added)). The combination of Tamai and Bhavsar is improper because there no teaching, suggestion or motivation either explicitly or implicitly provided in either of the references.

As discussed in detail above, Tamai achieves its stated objects by deactivating all of the cylinders during deceleration. Therefore, Tamai provides no teaching, suggestion or motivation for deactivation of less than all of the cylinders. In fact, Tamai implicitly teaches against such a combination because Tamai would not be able to achieve its stated objects under such a combination.

Bhavsar is completely silent as to braking of the vehicle and is specifically silent as to regenerative braking of the vehicle. In fact, there is no explicit or implicit discussion of operation of the engine during vehicle braking. Moreover, Bhavsar is

wholly focused on consistently providing drive torque to the vehicle. This is completely opposite to braking of a vehicle. Therefore, Bhavsar provides no teaching, suggestion or motivation for the desirability of such a combination.

C. It is again respectfully asserted that although the person skilled in the art is presumed to know the art, the art in question is only that which he or she would have selected without the advantage of hindsight or knowledge of the invention (see *Union Carbide Corp. v. American Can Co.*, 220 USPQ 584 (Fed. Cir. 1984)). In making this obviousness rejection, the Examiner improperly uses improper hindsight.

In the latest Office Action, the Examiner has noted that any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning. Applicant respectfully notes that the level of hindsight reasoning used in the present case surpasses that which may be considered proper.

As discussed in detail above, and as admitted by the Examiner, Tamai fails to teach or suggest maintaining at least another of the cylinders active in response to the braking condition. Furthermore, Tamai provides no teaching, suggestion or motivation to deactivate less than all of the cylinders during a braking condition and, in fact, implicitly teaches away from such. As also discussed in detail above, Bhavsar is completely silent as to braking of a vehicle and is wholly focused on providing sufficient drive torque to the vehicle to propel and not brake the vehicle.

Accordingly, neither reference discloses the feature of deactivating less than all of the cylinders in response to a braking condition. Instead, the Examiner has implied this feature from Bhavsar even though Bhavsar makes no mention of braking a vehicle. The only motivation for such an implication is using the features of the present invention

as a road map in an attempt to identify a feature that is actually absent from a reference and to justify a combination of the references. Such implication is not only itself improper but amounts to the use of improper hindsight.

D. In view of the foregoing, it is respectively asserted that Bhavsar fails to cure the deficient disclosure of Tamai and that the combination of Bhavsar with Tamai is improper. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

E. Each of claims 3, 5 and 6 depend from claim 1, which defines over the prior art, as discussed in detail above. Therefore, claims 3, 5 and 6 also define over the prior art, for at least the reasons discussed with respect to claim 1, and reconsideration and withdrawal of the rejections are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102 AND § 103

Claims 8 – 10 and 12 – 16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Tamai et al. (U.S. Pat. No. 6,307,277) in view of Bhavsar (U.S. Pat. No. 6,691,807).. This rejection is respectfully traversed.

A. Applicant incorporates the above discussion with respect to claim 1. As discussed in detail above, the system of Tamai deactivates all of the cylinders during regenerative braking. As also discussed in detail above, Bhavsar is completely silent as to braking and is wholly focused on splitting the drive torque requirement between an electric machine and an engine, while operating the engine in a reduced cylinder mode as consistently as possible. Furthermore, the combination of Tamai and Bhavsar is

improperly based on hindsight, in view of the fact that neither reference discloses maintaining at least one cylinder active during the braking condition. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.


B. Each of claims 9, 10, 12 and 14 – 16 depend from one of claims 8 and 13, which define over the prior art, as discussed in detail above. Therefore, claims 9, 10, 12 and 14 – 16 also define over the prior art, for at least the reasons discussed with respect to claims 8 and 13, and reconsideration and withdrawal of the rejections are respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Final Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this response is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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